

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1-53 (canceled)

Claim 54 (previously presented): A method of vectorizing a set of document predicate structures, comprising steps of:

identifying at least one predicate and argument in said set of document predicate structures by a predicate key that is an integer representation, and estimating conceptual nearness of two of said document predicate structures in said set of document predicate structures by subtracting corresponding one of said predicate keys.

Claim 55 (previously presented): A method of vectorizing a set of document predicate structures, as recited in claim 54, comprising the further step of constructing multi-dimensional vectors using said integer representation.

Claim 56 (original): A method of vectorizing a set of document predicate structures, as recited in claim 55, comprising the further step of normalizing said multi-dimensional vectors.

Claim 57 (previously presented): A method of vectorizing a set of document predicate structures, as recited in claim 54, comprising the further step of identifying at least one query predicate structure by a second predicate key that is a second integer representation, and constructing second multi-dimensional vectors, for said at least one query predicate structure, using said second integer representation.

Claim 58 (previously presented): A method of vectorizing a set of document predicate structures, as recited in claim 56, comprising the further step of identifying at least one query predicate structure by a second predicate key that is a second integer representation, and

constructing second multi-dimensional vectors, for said at least one query predicate structure, using said second integer representation.

Claims 59-69 (canceled)

Claim 70 (new): A method of vectorizing a set of document predicate structures, comprising steps of:

identifying at least one predicate in said set of document predicate structures by a predicate key that is an integer representation, and estimating conceptual nearness of two of said document predicate structures in said set of document predicate structures by subtracting corresponding one of said predicate keys.

Claim 71 (new): A method of vectorizing a set of document predicate structures, as recited in claim 70, comprising the further step of constructing multi-dimensional vectors using said integer representation.

Claim 72 (new): A method of vectorizing a set of document predicate structures, as recited in claim 71, comprising the further step of normalizing said multi-dimensional vectors.

Claim 73 (new): A method of vectorizing a set of document predicate structures, as recited in claim 70, comprising the further step of identifying at least one query predicate structure by a second predicate key that is a second integer representation, and constructing second multi-dimensional vectors, for said at least one query predicate structure, using said second integer representation.

Claim 74 (new): A method of vectorizing a set of document predicate structures, as recited in claim 72, comprising the further step of identifying at least one query predicate structure by a second predicate key that is a second integer representation, and constructing second multi-

dimensional vectors, for said at least one query predicate structure, using said second integer representation.

Claim 75 (new): A method of constructing multi-dimensional vector representations for each document of a set of documents, comprising steps of:

- determining each predicate structure of one or more predicate structures M in each document of the set of documents, said M predicate structures include a predicate and at least one argument;

- identifying the predicate and the at least one argument in each of said M predicate structures by a predicate key that is an integer representation;

- determining a fixed number of arguments q for vector construction;

- constructing an N-dimensional vector representation of each document based upon the predicate and q arguments,

- wherein any predicate structure of said M predicate structures that includes less than q arguments fills unfilled argument positions with a numerical zero.

Claim 76 (new): The method of constructing multi-dimensional vector representations according to claim 75, wherein any predicate structure of said M predicate structures that includes more than q arguments omits remaining arguments after q argument positions are filled.

Claim 77 (new): The method of constructing multi-dimensional vectors according to claim 76, wherein conceptual nearness of two of said N-dimensional vector representations is estimated by subtracting corresponding one of said predicate keys:

Claim 78 (new): The method of constructing multi-dimensional vectors according to claim 76, further comprising a step of normalizing said N-dimensional vector representations.

Claim 79 (new): The method of constructing multi-dimensional vectors according to claim 75, wherein conceptual nearness of two of said N-dimensional vector representations is estimated by subtracting corresponding one of said predicate keys.

Claim 80 (new): The method of constructing multi-dimensional vectors according to claim 75, further comprising a step of normalizing said N-dimensional vector representations.